

What is claimed is:

1. A method for determining print progress of a document being printed on a printer, comprising:
 - monitoring print progress of a document during printing; and
 - computing in real time the percentage of said printing which has been completed based on said monitoring.
2. A method in accordance with claim 1, further comprising:
 - storing the computed percentage in non-volatile memory.
3. A method in accordance with claim 1, further comprising:
 - reporting the computed percentage to a host device associated with the printer.
4. A method in accordance with claim 3, further comprising:
 - storing the computed percentage in non-volatile memory of the host device.
5. A method in accordance with claim 1, further comprising:
 - displaying the computed percentage on a printer display.
6. A method in accordance with claim 1, further comprising:
 - displaying the computed percentage on a display of a host device associated with said printer.
7. A method in accordance with claim 1, wherein:
 - said monitoring comprises monitoring movement of a paper drive mechanism of said printer during printing.
8. A method in accordance with claim 1, wherein:
 - said monitoring is independent of a paper drive mechanism of said printer.

9. A method in accordance with claim 1, further comprising:

detecting a printing error if less than 100 percent of the document is printed.

10. A method in accordance with claim 9, further comprising:

determining whether sufficient information was printed to provide a usable document.

11. A method in accordance with claim 1, wherein:

said document comprises a ticket, a coupon, a voucher, or a receipt.

12. A method in accordance with claim 1, wherein said document comprises a plurality of print fields, further comprising;

determining print completion status of each of said plurality of print fields based on said computed percentage.

13. A method in accordance with claim 12, further comprising:

reporting said print field completion status from said printer to a host device.

14. A method in accordance with claim 13, wherein:

said reporting comprises real-time reporting during said printing.

15. A method in accordance with claim 12, further comprising:

storing the print field completion status in at least one of non-volatile memory of the printer and non-volatile memory of the host device.

16. A method in accordance with claim 12, further comprising:

displaying the print field completion status on at least one of a printer display or a host device display.

17. A method in accordance with claim 12, further comprising:

detecting a printing error if less than all of said plurality of print fields are printed.

18. A method in accordance with claim 17, further comprising:

determining whether a sufficient number of print fields were printed to provide a usable document.

19. A method in accordance with claim 12, wherein:

said determining step comprises:

determining a location and size of each print field;

comparing the location and size of each print field with the computed percentage to determine the print field completion status for each print field.

20. A method in accordance with claim 12, wherein:

said plurality of print fields comprises critical and non-critical fields; and

said determining step comprises:

determining a location and size of each critical field;

comparing the location and size of each critical field with the computed percentage to determine the print field completion status for each critical field.

21. A method in accordance with claim 20, wherein:

a usable document is created when all critical fields are printed.

22. A method in accordance with claim 20, wherein:

said determining step further comprises:

determining a location and size of each non-critical field;

comparing the location and size of each non-critical field with the computed percentage to determine the print field completion status for each non-critical field.

23. A method in accordance with claim 1, wherein said monitoring comprises:

sensing rotational movement of a sensing wheel which rides on the document and which is rotated as the document travels along a paper path during said printing.

24. A method in accordance with claim 2, wherein:

the rotational movement of the sensing wheel is detected by an optical sensor.

25. A method in accordance with claim 23, wherein;

the rotational movement of the sensing wheel is detected by a magnetic sensor.

26. A method in accordance with claim 1, wherein said monitoring comprises:

sensing the position of the document as the document travels along a paper path during said printing via a series of sensors arranged along the paper path.

27. A method in accordance with claim 26, wherein:

said sensors comprise optical sensors.

28. A method in accordance with claim 26, wherein:

said sensors comprise mechanically actuated sensors actuated by movement of the document along the paper path.

29. A method in accordance with claim 1, wherein said monitoring comprises:

sensing rotational movement of a cam which is rotated by the document as the document travels along a paper path during said printing.

30. A method in accordance with claim 29, wherein:

the rotational movement of the cam is detected by an optical sensor.

31. A method in accordance with claim 29, wherein;

the rotational movement of the cam is detected by a magnetic sensor.

32. A method in accordance with claim 1, wherein said monitoring comprises:

sensing the position of the document as the document travels along a paper path during said printing via an optical navigation sensor.

33. Apparatus for determining print progress of a document being printed on a printer, comprising:

monitoring means for monitoring print progress of a document during printing; and
a processor for computing in real time the percentage of said printing which has been completed based on said monitoring.

34. Apparatus in accordance with claim 33, further comprising:

non-volatile memory for storing the computed percentage.

35. Apparatus in accordance with claim 33, wherein:

the computed percentage is reported to a host device associated with the printer.

36. Apparatus in accordance with claim 35, wherein:

the computed percentage is stored in non-volatile memory of the host device.

37. Apparatus in accordance with claim 33, further comprising:

a display for displaying the computed percentage.

38. Apparatus in accordance with claim 33, wherein:

the computed percentage is displayed on a display of a host device associated with said printer.

39. Apparatus in accordance with claim 33, wherein:

said monitoring means monitors movement of a paper drive mechanism of said printer during printing.

40. Apparatus in accordance with claim 33, wherein:

 said monitoring means is independent of a paper drive mechanism of said printer.

41. Apparatus in accordance with claim 33, wherein:

 a printing error is detected if less than 100 percent of the document is printed.

42. Apparatus in accordance with claim 41, wherein:

 said processor determines whether sufficient information was printed to provide a usable document.

43. Apparatus in accordance with claim 33, wherein:

 said document comprises a ticket, a coupon, a voucher, or a receipt.

44. Apparatus in accordance with claim 33, wherein:

 said document comprises a plurality of print fields; and

 said processor further determines print completion status of each of said plurality of print fields based on said computed percentage.

45. Apparatus in accordance with claim 44, wherein:

 said print field completion status is reported from said printer to a host device.

46. Apparatus in accordance with claim 45, wherein:

 said print field completion status is reported in real-time during said printing.

47. Apparatus in accordance with claim 44, wherein:

the print field completion status is stored in at least one of non-volatile memory of the printer and non-volatile memory of the host device.

48. Apparatus in accordance with claim 44, wherein:

the print field completion status is displayed on at least one of a printer display or a host device display.

49. Apparatus in accordance with claim 44, wherein:

a printing error is detected if less than all of said plurality of print fields are printed.

50. Apparatus in accordance with claim 49, further comprising:

determining whether a sufficient number of print fields were printed to provide a usable document.

51. Apparatus in accordance with claim 44, wherein:

said processor determines a location and size of each print field and compares the location and size of each print field with the computed percentage to determine the print field completion status for each print field.

52. Apparatus in accordance with claim 44, wherein:

said plurality of print fields comprises critical and non-critical fields; and
said processor determines a location and size of each critical field and compares the location and size of each critical field with the computed percentage to determine the print field completion status for each critical field.

53. A method in accordance with claim 52, wherein:

a usable document is created when all critical fields are printed.

54. A method in accordance with claim 52, wherein:

said processor further determines a location and size of each non-critical field and compares the location and size of each non-critical field with the computed percentage to determine the print field completion status for each non-critical field.

55. Apparatus in accordance with claim 33, wherein said monitoring means comprises:
a sensing wheel which rides on the document and which is rotated as the document travels along a paper path during said printing; and
a sensor for sensing rotational movement of the sensing wheel.

56. Apparatus in accordance with claim 55, wherein:
the sensor comprises an optical sensor.

57. Apparatus in accordance with claim 55, wherein;
the sensor comprises a magnetic sensor.

58. Apparatus in accordance with claim 33, wherein said monitoring means comprises:
a series of sensors arranged along a paper path which sense the position of the document as the document travels along the paper path during said printing.

59. Apparatus in accordance with claim 58, wherein:
said sensors comprise optical sensors.

60. Apparatus in accordance with claim 58, wherein:
said sensors comprise mechanically actuated sensors actuated by movement of the document along the paper path.

61. Apparatus in accordance with claim 33, wherein said monitoring means comprises:
a cam which is rotated by the document as the document travels along a paper path during said printing; and

a sensor for sensing rotational movement of the cam.

62. Apparatus in accordance with claim 61, wherein:

the sensor comprises an optical sensor.

63. Apparatus in accordance with claim 61, wherein;

the sensor comprises a magnetic sensor.

64. Apparatus in accordance with claim 33, wherein said monitoring means comprises:

an optical navigation sensor which senses the position of the document as the document travels along a paper path during said printing.